# THE PREVENTION OF TROPICAL ABSCESS OF THE LIVER BY THE EARLY DIAGNOSIS AND TREATMENT OF THE PRESUPPURATIVE STAGE OF AMŒBIC HEPATITIS

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## PREVIOUS PUBLICATIONS OF THE BUREAU OF GOVERNMENT LABORATORIES.

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[1] *No. 1, 1902, Biological Laboratory.*—Preliminary Report of the Appearance in the Philippine Islands of a Disease Clinically Resembling Glanders. By R. P. Strong, M. D.

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[1] *No. 5, 1903, Biological Laboratory.*—Trypanosoma and Trypanosomiasis, with Special Reference to Surra in the Philippine Islands. By W. E. Musgave, M. D., and Moses T. Clegg.

[1] *No. 6, 1903.*—New and Noteworthy Plants, I. The American Element in the Philippine Flora. By Elmer D. Merrill, Botanist. (Issued January 20, 1904.)

[1] *No. 7, 1903, Chemical Laboratory.*—The Gutta Percha and Rubber of the Philippine Islands. By Penoyer L. Sherman, jr., Ph. D.

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[1] *No. 11, 1903, Biological Laboratory.*—Entomological Division, Bulletin No. 1: Preliminary Bulletin on Insects of the Cacao. (Prepared Especially for the Benefit of Farmers.) By Charles S. Banks, Entomologist.

[1] *No. 12, 1903, Biological Laboratory.*—Report on Some Pulmonary Lesions Produced by the Bacillus of Hæmorrhagic Septicæmia of Carabaos. By Paul G. Woolley, M. D.

*No. 13, 1904, Biological Laboratory.*—A Fatal Infection by a Hitherto Undescribed Chromogenic Bacterium: Bacillus Aureus Fœtidus. By Maximilian Herzog, M. D.

[1] *No. 14, 1904.—Serum Laboratory:* Texas Fever in the Philippine Islands and the Far East. By J. W. Jobling, M. D., and Paul G. Woolley, M. D. *Biological Laboratory:* Entomological Division, Bulletin No. 2: The Australian Tick (Boophilus Australis Fuller) in the Philippine Islands. By Charles S. Banks, Entomologist.

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[1] Out of print.

[2] The first four bulletins in the ornithological series were published by the Ethnological Survey under the title "Bulletins of the Philippine Museum." Later ornithological publications of the Government appeared as publications of the Bureau of Government Laboratories.

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# THE PREVENTION OF TROPICAL ABSCESS OF THE LIVER BY THE EARLY DIAGNOSIS AND TREATMENT OF THE PRESUPPURATIVE STAGE OF AMŒBIC HEPATITIS.[1]

By LEONARD ROGERS.[2]

During the last seven years I have enjoyed most exceptional opportunities for studying tropical abscess of the liver in Calcutta, and have now arrived at the conclusion that the disease can and should be prevented altogether in the great majority of cases. The following are, briefly, the steps by which I have reached this position.

In 1902[3] I published a paper on tropical or amœbic abscess of the liver and its relationship to amœbic dysentery, in which I gave tables to show that I had found living amœbæ in scrapings from the walls of 35 out of 37 consecutive liver abscesses, the two negative results being in those livers not examined until twelve or more days after the abscess had been opened and drained. Further, two-thirds of the abscesses, when first opened, were sterile as regards the presence of bacteria. Kruse and Pasquale had previously found amœbæ in only 6 out of 15 cases of liver abscess. I also showed that when both a clinical history and a post-mortem were available, in 90 per cent of the cases dysentery was found to be associated with the liver abscess, and in 95 per cent of these there was evidence that the dysentery preceded the formation of the abscess, which was always, in my experience, of the amœbic variety. I therefore concluded that the large tropical abscesses (as opposed to those due to suppuration in the portal veins or in the bile ducts) were always due to the *Amœba dysenteriæ* and were secondary to amœbic dysentery, although the latter might often be of a latent nature, giving rise to no typical dysenteric symptoms during life, but revealing itself in the shape of a few amœbic ulcers found post-mortem, usually high up in the large bowel in the cæcum or ascending colon.

[1] Read at the Fifth Annual Meeting of the Philippine Islands Medical Association, February 29, 1908.

[2] Professor of Pathology, Medical College, Calcutta.

[3] *Brit. Med. Journ.* (1902), **2**, 844.



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In a second paper, in 1903,[4] I gave an account of amœbic dysentery in India, illustrated by a colored plate, and discussed the mode of formation of amœbic abscess of the liver, and in 1905,[5] I dealt with the value of leucocytosis in the early diagnosis of amœbic abscess, and pointed out that, although occasionally an attack of acute hepatitis with leucocytosis may clear up without suppuration occurring, yet if such cases are followed up, sooner or later an abscess of the liver nearly always forms. I also narrated a case of acute hepatitis with leucocytosis, which cleared up under large doses of ipecacuanha. In 1906[6] I published an article on two cases of amœbic abscess of the liver successfully treated by aspiration and injection of the soluble acid quinine hydrochloride, without drainage, having found that the amœbæ in thick liver abscess pus could readily be killed by that drug in a strength of from 1 in 100 to 1 in 500, a method which has since proved effective in other hands, especially in early, deep-seated abscesses although it fails in many more advanced cases.

While on the lookout for the early stages of the disease for this line of treatment, I met with a number of cases of fever with leucocytosis and symptoms of acute hepatitis, in some of which aspiration failed to reveal any abscess; they yielded, however, very rapidly to full doses of ipecacuanha, thus showing that the increase of the leucocytes takes place before actual suppuration has set in and sometimes many days earlier. Last year (1907)[7] I published a series of such cases which were rapidly cut short in the presuppurative stage by the ipecacuanha treatment, which may be briefly summarized as follows:

Fifteen cases were met with during twelve months in the Calcutta European General Hospital. In only three was there a clear history of dysentery or symptoms of it while in hospital, while these lost their fever and hepatitis after two to four days treatment with ipecacuanha, although they had previously suffered from fever for fifteen, thirty-four, and forty-one days respectively, and one had been aspirated for liver abscess with a negative result. In three more cases of acute hepatitis, without dysentery, not treated by ipecacuanha, the fever only subsided after from thirty-four to forty-nine days. In five similar cases treated with ipecacuanha the fever subsided in from one to six days, although it had previously persisted for from thirteen to fifty days, one patient having been aspirated with a negative result. Lastly, there were three cases of fever with no signs of either dysentery or hepatitis, other than very slight painless enlargement of the liver, but with leucocytosis of the same type as in the other cases, namely without very marked increase of the proportion of the polynuclears (usually from 70 to 80 per cent.) They had suffered from fever for thirty-five, forty-five, and fifty-three days, respectively, which ceased in from two to fifteen

[4] *Brit. Med. Journ.* (1903), **1**, 1315.
[5] *Ibid.* (1905), **2**, 1291.
[6] *Ibid.* (1906), **1**, 1397.
[7] *Practitioner* (1907), **78**, 766; Fevers in the Tropics (Oxford Medical Publications) (1908).

days under ipecacuanha. This is the class of case in which a large, deep-scated, fibrous walled amœbic abscess of the liver forms very insidiously with irregular intermittent fever; it is commonly treated as malarial, and there are no obvious signs of hepatitis until a very late stage. Two of the above fifteen cases relapsed and returned to the hospital four and seven months later, respectively, with an amœbic abscess of the liver.

When dysentery is present and complicated by hepatitis, ipecacuanha is advised by Sir Patrick Manson and other authorities, but at the time the above paper was published I was unable to find any recent writer who recommended large doses of ipecacuanha for hepatitis when accompanied by dysentery, although several of the older authors in India, especially McClean and Norman Chevers, also strongly urged its use for this purpose. The considerations which led me regularly to adopt this treatment were the finding of dysentery associated with 90 per cent of tropical liver abscesses, and the fact mentioned above, that in many patients dying of liver abscess, without history or symptoms of dysentery, amœbic ulcers are found post-mortem in the upper part of the large bowel. I therefore regarded hepatitis, accompanied by leucocytosis, as an indication of the presence of latent amœbic ulceration of the large bowel, which indicated large doses of ipecacuanha for its cure. The results of this treatment, both of those cases mentioned above and of subsequent ones, have been so successful that during the last two years no instance of liver abscess has developed while the patient was in the European General Hospital, Calcutta, although a few patients have been admitted with an abscess already formed. A number of cases of such acute hepatitis in which an abscess was suspected (and in five instances sought for in vain by the aspirating needle) have cleared up entirely under the ipecacuanha treatment. The following three examples, which have occurred during the last two months, will serve to illustrate the value of this method of treatment.

Case 1. *Very acute hepatitis following on dysentery, rapidly cured by ipecacuanha.*—A European male, aged 25, was admitted for dysentery of six weeks' duration, passing, without pain or straining, about six stools daily containing blood and mucus. He was treated with a castor oil mixture and with creolin enemas and the blood and mucus disappeared from the stools after ten days. Seven days later (September 11) he began to suffer pain in the hepatic region and in the right shoulder and his temperature, which had previously been slightly subnormal, began to rise. (See chart 1.) The liver dullness was not increased, extending from the sixth rib to the costal margin. The pains continued to be severe, and on the 13th the breath sounds were noted to be weak at the base of the right lung. Morphine was given for the pain, and quinine, 10 grains, three times a day for the fever. On the 15th there was profuse sweating, while the liver dullness reached up to the fifth rib. Five leeches over the liver relieved the pain somewhat. On the 16th, the right chest was observed to be moving less than the left, and on the 18th, X rays showed that the diaphragm on the right side was quite motionless, while there appeared to be a slight shadow in the right lobe of the liver.

Abscess of the liver was diagnosed. However, as there had been recent dysentery, which had not been treated by full doses of ipecacuanha, the physician in charge of the patient (who had over twenty years' experience with Indian diseases) agreed to use the ipecacuanha treatment for a short time before operating on the liver abscess, the existence of which he did not doubt. Thirty grains of the drug were given daily from the 19th to the 27th, with the result that the temperature steadily fell as shown in chart 1, and the signs of acute hepatitis simultaneously completely subsided. On the 20th, the pain over the liver and the sweating had both diminished, and the patient slept better. By the 21st, the pain had ceased over the liver, although it continued in a slight degree in the right shoulder for another day. On the 23d, the temperature was normal and there was no pain or sweating, and all suspicion of liver abscess had disappeared. The patient was kept in the hospital up to the 22d of November, but had no more signs of dysentery or hepatitis and gained weight steadily. There was no shadow of doubt in the minds of all who watched this patient that the ipecacuanha treatment averted suppuration in the liver.

Case 2. *Dysentery followed by hepatitis with temporary recovery; very acute hepatitis successfully treated two and one-half months later with ipecacuanha.*—European male, aged 26, admitted August 20, 1907, with a history of dysentery eight months before, followed after three weeks by pain in the epigastrium. On admission there was slight enlargement of the liver with pain over it. Stools loose, but no blood or mucus; intermittent fever rising to 101° or 102° F. in the evenings. The diaphragm moved well, and there was only a slight increase of the leucocytes, with but 65 per cent of polynuclears. The symptoms of hepatitis subsided in three weeks under salines and quinine, and the patient left the hospital apparently well. He returned two and a half months later (November 26) having had fever every evening for the previous month and a half, with rigors at times and intermittent, sharp pain over the liver. His bowels had been constipated. He was now weak and thin. There was slight bulging in the hepatic region, without marked tenderness. The breath sounds at the right base were diminished, with a decrease of vocal fremitus and vocal resonance. The liver dullness extended from the fifth space to 3 inches below the costal margin in the nipple line. No œdema was present. The spleen was not enlarged. Under X rays the right half of the diaphragm was observed to be 2 inches higher than the left and scarcely moved, even with deep respiration, but there was no shadow. A blood count showed red corpuscles 3,570,000, white 15,000, ratio of white to red, 1 to 236; polynuclears 77, lymphocytes 23; large mononuclears 9 and eosinophiles 1 per cent.

Because of the acuteness of the symptoms and the fullness in the hepatic region, liver abscess was suspected, but it was determined to try the ipecacuanha treatment before operating, so 30 grains were given on the evening of the 27th, and 40 grains on the following four evenings. On the 28th and 29th the hepatic pain was distinctly less, and the patient could turn over on his right side, which he could not do before. On the 30th there was no pain or tenderness over the liver. On the 2nd

of December his temperature remained normal for the first time, and a steady convalescence followed, the liver receding until it was only just felt beneath the costal margin. The ipecacuanha was continued in 30-grain doses at increasing intervals up to January 5, 1908, in order to guard against the possibility of a relapse, and the patient left the hospital apparently quite well on January 9. The rapid lessening of the pain, followed by the decline of the fever and decrease in the enlargement of the liver under the ipecacuanha was most striking in this case, and indicated that the treatment prevented suppuration of the liver.

CASE 3. *Hepatitis, history or symptoms of dysentery rapidly subsiding under ipecacuanha treatment.*—European male, aged 51, admitted on December 3, 1907, for fever. He had been ill for two weeks with fever and pain in the right hypochondrium, with nausea and loss of appetite. No rigors, but the patient felt chilly at times, with sweats at night. The bowels were constipated. The liver extended 1 inch below the costal margin, and was very tender. Other organs normal. A blood count on the 11th showed 4,670,000 red corpuscles, 12,875 white, ratio of white to red 1 to 363, polynuclears 81, lymphocytes 12, large mononuclears 6, and eosinophiles 1 per cent.

Ipecacuanha was commenced on the 7th of December, 30 grains being given each evening. Two days later the temperature began to decline and reached normal on the 11th, after which there was only one rise on the 13th accompanied by a rigor, being possibly malarial in nature. On the 17th the liver had become reduced in size, being only just felt below the ribs, and the patient left the hospital apparently quite well on the 22d of December. (See chart 3.) This is an example of the less acute form of hepatitis, which drifts insidiously on into suppuration after weeks of intermittent fever. It is only one step further to the class already mentioned, in which there is no pain or tenderness over the liver, and the leucocytosis alone raises a suspicion as to the true nature of the case, which suspicion is confirmed by the chronic fever rapidly yielding to large doses of ipecacuanha.

## METHODS OF GIVING IPECACUANHA.

In giving large doses of ipecacuanha in amœbic dysentery and hepatitis, precautions must be taken to avoid vomiting, especially if it is possible that an abscess of the liver has already formed. The usual method is to give either tincture of opium or chloral hydrate some twenty minutes before the powdered ipecacuanha, no food or drink being given for several hours before and after the dose, which is best administered once a day in the evening. Recently I have had the drug put up in quantities of 5 grains in keratinized capsules, which are not dissolved until they reach the small intestines, and this has worked very well, no antecedent sedative being required. Dr. R. B. Grubbs, of the United States Army, has recently informed me that the same effect is produced by coating

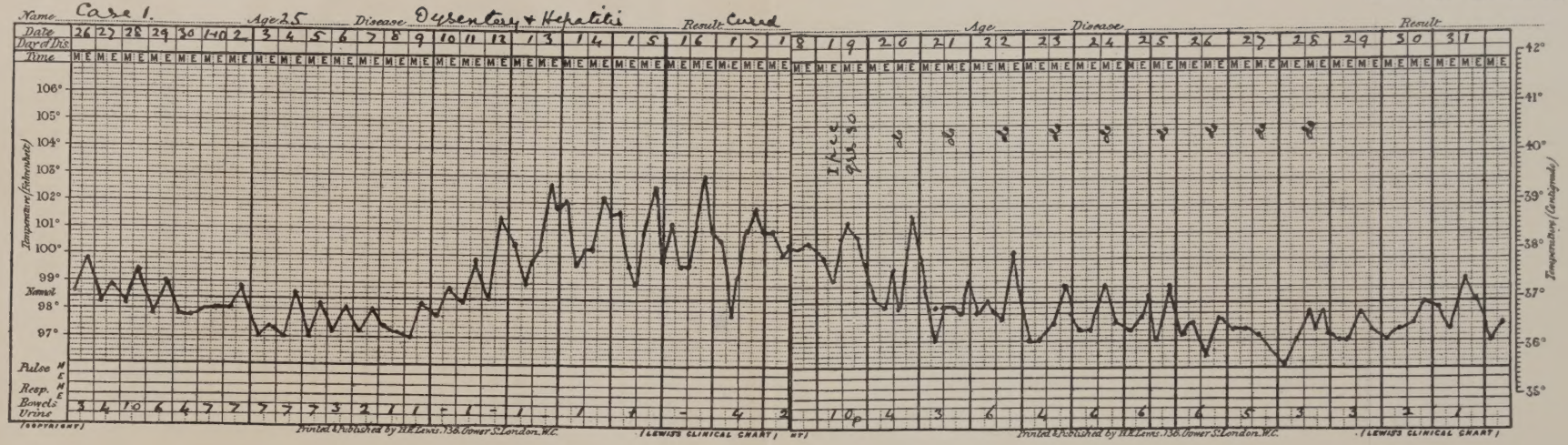
ipecacuanha pills with melted salol, but I have not yet had an opportunity of trying this method. From 30 to 60 grain doses of the drug have been used, but the smaller quantity appears to be sufficient. It should be continued for at least two weeks at increasing intervals, as two of my earlier cases, in which the ipecacuanha was discontinued as soon as the temperature fell, subsequently relapsed some months later, presumably owing to the latent amœbic ulcers not having been completely cured.

### DURATION OF THE PRESUPPURATIVE STAGE OF AMŒBIC HEPATITIS.

There remains to be considered a very important question. What is the usual duration of the presuppurative stage of amœbic hepatitis, during which the ipecacuanha treatment will avert the formation of an abscess in the liver? An examination of my records during the last seven years has furnished the following data: Out of fifty-three native patients admitted to the hospital with liver abscess, often bulging through the thoracic or abdominal wall, 51 per cent gave a history of over two months' illness, and an additional 38 per cent, one of between one and two months; 9 per cent from two weeks to a month, and only 2 per cent under two weeks. Among 26 cases in Europeans there had been fever or hepatitis for over one month in 50 per cent, from two weeks to a month in 34.6, and of less than two weeks in only 13.4 per cent (4 cases of 9, 11, 7, 13 days respectively). It is clear from these figures that in the vast majority of instances there is ample time for the diagnosis by the blood examinations and for the ipecacuanha treatment during the presuppurative stage. Very rarely multiple abscesses may develop within a few days with extreme acuteness, yet I believe it is not too much to say that over 90 per cent of amœbic abscesses of the liver can and should be prevented by the methods described in this communication, and thus one of the greatest scourges of some tropical countries may be conquered.

# ILLUSTRATIONS.

Charts 1, 2, and 3. 291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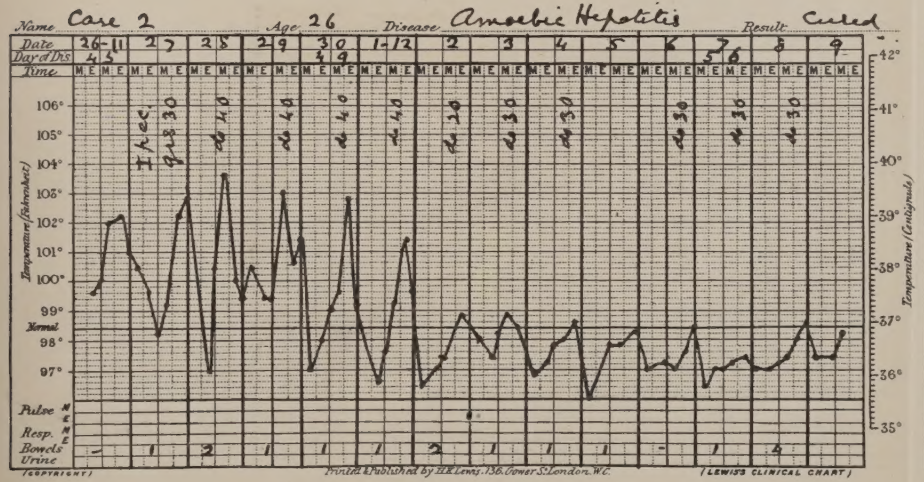
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Temperature (Fahrenheit)
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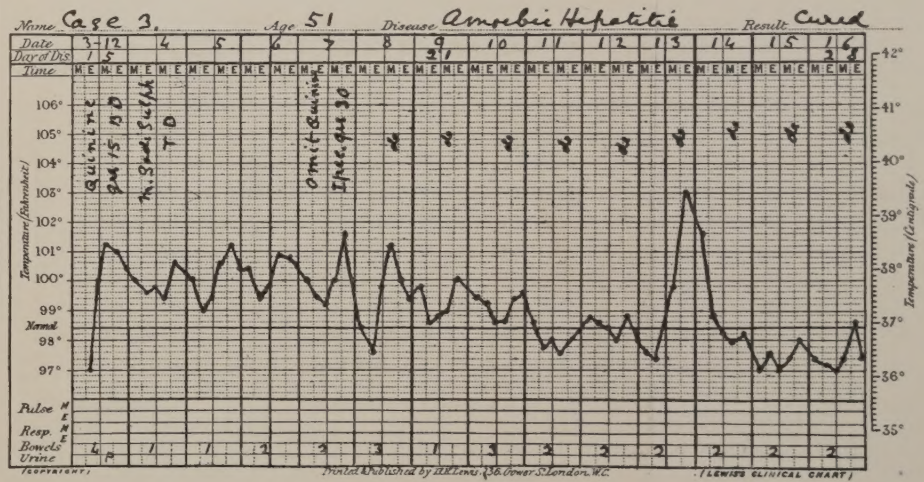
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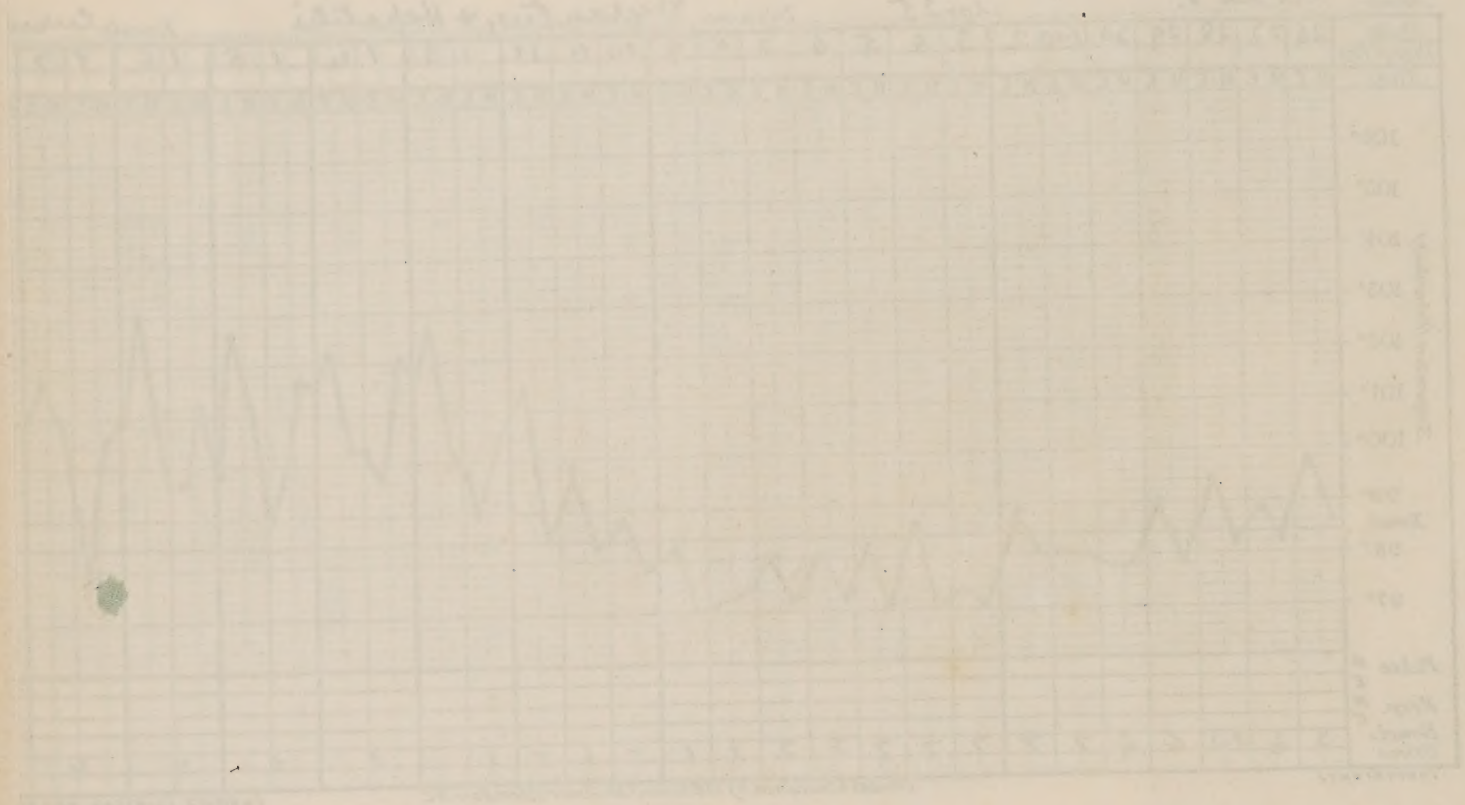

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**(Concluded from second page of cover.)**

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*No. 33, 1905, Biological Laboratory.*—Further Observations on Fibrin Thrombosis in the Glomerular and in Other Renal Vessels in Bubonic Plague. By Maximilian Herzog, M. D.

[1] *No. 34, 1905.*—I. Birds from Mindoro and Small Adjacent Islands. II. Notes on Three Rare Luzon Birds. By Richard C. McGregor.

*No. 35, 1905.*—I. New or Noteworthy Philippine Plants, IV. II. Notes on Cuming's Philippine Plants in the Herbarium of the Bureau of Government Laboratories. III. Hackel, "Notes on Philippine Grasses." IV. Ridley, "Scitimineæ Philippinenses." V. Clarke, "Philippine Acanthaceæ." By Elmer D. Merrill, Botanist.

*No. 36, 1905.*—A Hand-List of the Birds of the Philippine Islands. By Richard C. McGregor and Dean C. Worcester.

## LIST OF PREVIOUS PUBLICATIONS OF THE MINING BUREAU (NOW DIVISION OF MINES OF THE BUREAU OF SCIENCE).

*1890.*—Descripción física, geológica y minera en bosquejo de la Isla de Panay por D. Enrique Abella y Casariego, Inspector General de Minas del Archipiélago.

*1890.*—Memoria descriptiva de los manantiales minero-medicinales de la Isla de Luzon, estudiados por la comisión compuesta de los Señores D. José Centeno, Ingeniero de Minas y Vocal Presidente, D. Anacleto del Rosario y Sales, Vocal Farmacéutico, y D. José de Vera y Gómez, Vocal Médico.

*1893.*—Estudio descriptivo de algunos manantiales minerales de Filipinas ejecutado por la comisión formada por D. Enrique Abella y Casariego, Inspector General de Minas D. José de Vera y Gómez, Médico, y D. Anacleto del Rosario y Sales, Farmacéutico; precedido de un prólogo escrito por el Excmo. Sr. D. Angel de Avilés, Director General de Administración Civil.

*1893.*—Terremotos experimentados en la Isla de Luzón durante los meses de Marzo y Abril de 1892, especialmente desastrosos en Pangasinán, Unión y Benguet. Estudio ejecutado por D. Enrique Abella y Casariego, Inspector General de Minas del Archipiélago.

*1901.*—The Coal Measures of the Philippines. Charles H. Burritt.

*1902.*—Abstract of the Mining Laws (in force in the Philippines, 1902). Charles H. Burritt.

*1902, Bulletin No. 1.*—Platinum and Associated Rare Metals in Placer Formations. H. D. McCaskey, B. S.

*1903.*—Report of the Chief of the Mining Bureau of the Philippine Islands. Charles H. Burritt.

*1903, Bulletin No. 2.*—Complete List of Spanish Mining Claims Recorded in the Mining Bureau. Charles H. Burritt.

*1903, Bulletin No. 3.*—Report on a Geological Reconnoissance of the Iron Region of Angat, Bulacan. H. D. McCaskey, B. S.

*1904.*—Fifth Annual Report of the Mining Bureau. H. D. McCaskey.

*1905.*—Sixth Annual Report of the Chief of the Mining Bureau. H. D. McCaskey.

*1905, Bulletin No. 4.*—A Preliminary Reconnoissance of the Mancayan-Suyoc Mineral Region, Lepanto, P. I. A. J. Eveland, Geologist.

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